

## SECTION 08331

### OVERHEAD COILING DOORS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes overhead coiling doors as required to close the openings, mounted as detailed or noted. Provide hand chain operation.
- B. Related Work Specified In Other Sections
  - 1. Steel framed door openings - Division 5.
  - 2. Painting - Division 9.

##### 1.2 PERFORMANCE REQUIREMENTS

- A. Design exterior door construction, including slat profile and gage, guides, windlocks, and other accessories, of sufficient rigidity to withstand a wind pressure of 20 psf, uniformly applied from either side of door, when door is in the fully closed position.
- B. Design components to operate for not less than 20,000 complete open/close cycles.
- C. Provide a tamper-proof cycle counter to 100,000 cycles.

##### 1.3 SUBMITTALS

- A. Furnish submittals for items that are identified in this Section by a different typeface and a bracketed code (e.g., *Item [L]*). Refer to Division 1, General Requirements for definition of codes for types of submittals and the administrative requirements governing submittal procedure. General submittal requirements pertaining to this Section are specified herein under this Article.
- B. Shop drawings shall show all overhead coiling doors including framing, mounting, and all accessories required for complete installation work to be provided.
- C. Guarantee: Furnish to the Owner, a written guarantee warranting that the overhead coiling door system will remain free from defects of workmanship and materials and will provide an operating overhead coiling door for a period of five years from date of final acceptance of the project. Include in the guarantee the provision that defective work will be repaired or replaced without delay, and at no cost to the Owner, during the guarantee period, including removal and replacement of other work required to repair or replace the defective parts.
- D. Submit directly to Owner manufacturer's operating and maintenance descriptive and operating data for door and operator per Division 1, General Requirements.

## 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Retain an experienced, certified, or authorized representative of the door manufacturer to install and maintain the door through the warranty period.
- B. Limitation of Source: Provide all doors, operators, and controls from one single source from the listed manufacturers indicated in PART 2.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Wrap, carton, and crate as required to provide physical and climatic protection during loading, shipping and job site storage and handling.
- B. Deliver packaged materials to the project site in the manufacturer's original, unopened containers, which bear intact, legible and visible labels that identify the manufacturer's name and brand name, the contents, grade and type.
- C. Upon delivery, immediately inspect shipments to assure their compliance with the requirements of the Contract Documents and approved submittals and that products are complete, undamaged and adequately protected. Immediately report damaged, missing, or defective items. Remove broken, damaged or unlabeled items from the site immediately.
- D. Store products in accordance with manufacturer's instructions with seals and labels intact, legible, and visible. Store products in a manner to prevent damage, soiling, theft, deterioration and contamination. Marred surfaces, cracked, checked spilt or warped materials will be rejected. Store materials subject to damage by climatic conditions in weathertight enclosures. Maintain temperature and humidity within the ranges or recommended by the manufacturer.
- E. Repair or clean items that have been damaged or soiled that can be restored to an "as new" condition at no cost to the Owner. The Owner's Representative shall be the judge of the effectiveness or remedial measures. Additional time or expenses required to secure replacements and to make repairs will not be considered by the Owner's Representative to justify an extension in the Contract time of completion or an increase to the Contract amount.

## PART 2 PRODUCTS

### 2.1 MATERIALS AND FABRICATION

- A. *Insulated Doors [D,P,G]*: Fabricate of interlocking, galvanized steel slats of flat profile standard with the manufacturer. Form slats of minimum 22 gage galvanized steel face and backing sheet completely enclosing a polyurethane insulating core to provide a U-rating of 0.2 and that meets the wind resistance requirements specified. Insulation shall comply with maximum flame spread of 75 and smoke developed of 450 per ASTM E 84. Use galvanized steel sheet per ASTM A 653, coating designation G90, zinc coating. Provide malleable iron endlocks on both ends of alternate slats; with integral slat lugs as windlocks, on each slat of

exterior doors; so as to retain the slats in the door guides. Provide weather-stripping on door guides, hood baffle, and door bottom.

1. Atlas Door "Thermal-Door".
2. Cookson "Insulated Rolling Door".
3. Cornell Iron Works, Inc. "Thermiser".
4. Wayne-Dalton Corp. "Thermo-Tite Insulated Door".
5. Overhead Door Corp. "Stormtite Insulated Slat".
6. Raynor Garage Doors "IF-Insulated Slat".
7. Mahon Door Corporation "Insulated Overhead Door".

- B. Bottom Bar: Provide full-width, rolled steel double angle on bottom of each door. Provide a neoprene rubber astragal of tubular profile standard with the manufacturer on the bottom bar for a positive seal when the door is closed. On motor operated doors, incorporate an electric fail safe type safety edge device in the tubular astragal, designed to stop the downward travel of the door instantly and reverse direction to the open position upon contact with any obstruction in the door opening.
- C. Guides: Fabricate from standard rolled steel angles, channels, or combinations with plate, not less than  $\frac{3}{16}$  inch thick stock, and of sufficient depth to insure retainage of slats in guides. Incorporate locking bar in guide profile to retain slats in the guide by acting against the endlocks. Bolt guides to clip angles with  $\frac{3}{8}$  inch diameter minimum size bolts; at labeled doors, provide for expansion and contraction at connection to prevent buckling of guides.
- D. Roller Shaft: Fabricate of steel pipe or structural tubular member of sufficient diameter and wall thickness to limit deflection to 0.03 inch per foot of span. Close ends of shaft with cast iron plugs, machined to fit the shaft, and secure with cap screws. Provide an oil-tempered, helical, counterbalancing steel spring in shaft designed for a minimum 100,000 cycles, mounted on the shaft plugs and a tension rod, capable of producing sufficient torque to assure easy operation of door from any position, and to hold the door in any position. Adjust spring tension from outside the roller shaft. Also, labeled door shafts to house an oil-tempered, helical steel spring, secured to same tension rod, capable of producing sufficient torque to start door downward, from any open position, when fusible link mechanism is activated.
- E. Brackets: Fabricate from heavy cast iron or steel, designed to form an end closure support for the hood. Fit the operator bracket hub and the plug in the spring end of shaft with self-lubricating bronze bearings or permanently lubricated sealed ball bearings.
- F. Hood: Fabricate from 24 gage galvanized sheet steel of same quality specified for slats, to be weathertight and formed to fit the contour of the end brackets and reinforced with stiffening rolls at top and bottom edges. At door widths in excess of 14 feet, provide reinforcing brackets or straps, at proper intervals, to provide rigidity.
- G. Locking Device: Furnish as follows:
1. Chain-hoist doors shall be provided with chain keepers suitable for padlocks by Section 08710.

- H. Safety Device: Provide each door with safety device to prevent door from falling more than three inches in case of damage to the drive chain, motor operator, or pipe shaft. Provide safety interlock switch on power doors to disengage power supply when door is locked.

## 2.2 DOOR OPERATION

### A. Manual Operation

- 1. Chain Operation: Operate each door from interior only, when unlocked, by operating a hand-chain actuated gear-driven power unit. Connect gear driven power unit to door roller shaft, having cast iron gears, and sprocket wheel with endless galvanized steel chain. Provide endless chain of sufficient length to come within two feet of the floor and provide a wall mounted keeper. Design gear reduction unit to reduce pull required on the hand chain to 35 pounds, maximum.

## 2.3 FINISHES

- A. Shop prime-paint all exposed surfaces of doors and door parts, except barrels and the enclosed mechanical parts not usually painted.
- B. Shop prime-paint all exposed parts of all types of operators. Cabinets, combination motor starters, safety switches, push button stations, and other items which are provided with an acceptable paint or enameled finish by the manufacturer, will need no further painting. However, handle such items in a manner that the finish is not marred or damaged.
- C. Bonderize all exposed galvanized surfaces, or apply galvanized metal primer, as standard with the manufacturer, so that surfaces are in proper condition to receive field painting. Apply one coat of rust-inhibiting metal primer, as standard with the manufacturer, on all other exposed metal surfaces, so that surfaces are in proper condition to receive field painting.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Mount, erect and install the doors, and door accessories, per door manufacturer's written instructions. Do all drilling, tapping, and cutting as required for the complete installation. Secure all parts in place in a rigid manner.
- B. Fit doors tightly to sills and jambs; operate door easily and quietly under all conditions. Provide weathertight doors at exterior openings, when door is in the fully close position.
- C. Provide all steel framing, not furnished by others, as required for a complete installation.
- D. Lubricate bearings and sliding parts; adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

### 3.2 FIELD QUALITY CONTROL

- A. After doors are installed, test-demonstrate, in the presence of the Owner's maintenance personnel, that the doors operate properly under all conditions and in proper sequence. Adjust doors and operating mechanism if test shows any malfunctioning. Test and adjust as many times as necessary until doors and door operations are correct.
- B. Train Owner's maintenance personnel how to adjust, operate and maintain doors.

### 3.3 DEMONSTRATION

- A. Engage a manufacturer-authorized service representative to perform punchlist, operation startup services and to train Owner's maintenance personnel: Test and adjust controls and safety operation. Replace any damaged components, and malfunctioning controls. Train Owner's maintenance personnel of safety procedures shutdown, troubleshooting, servicing, and preventative maintenance. Turnover documented operating and maintenance manuals. Refer to Division 1, General Requirements for O&M manuals and contract closeout.

END OF SECTION

Revision History	
Date	Rev. No.
A	0
B	0
C	0
D	0
E	0
F	0
02-19-09	0

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